

MONTHLY WEATHER REVIEW

Editor, ALFRED J. HENRY

VOL. 57, No. 4
W. B. No. 983

APRIL, 1929

CLOSED JUNE 3, 1929
ISSUED JULY 6, 1929

551.5 (084.3) PROJECTIONS FOR WORLD MAPS

By C. F. MARVIN AND OTHERS

I have been greatly interested in examining the two projections here presented and discussed in the papers immediately following.

If the meridional lines in Goode's projections be examined it will be noticed that some of them have a decided curvature, with convexity in both left hand and right hand directions. This, it seems to me, for the depicting of isobaric configurations, is especially unfor-

the Mercator projection for areas immediately contiguous to the Equator, presents decidedly the best cartographic representations of the earth's surface that are practical for meteorological purposes. In Figure 1 frontispiece is shown a photographic perspective of a globe inclosed by a skeleton frame representing a secant dodecahedron, each of the pentagonal surfaces of which has an area exactly equal to one-twelfth of the globe. In Figure 2 is shown

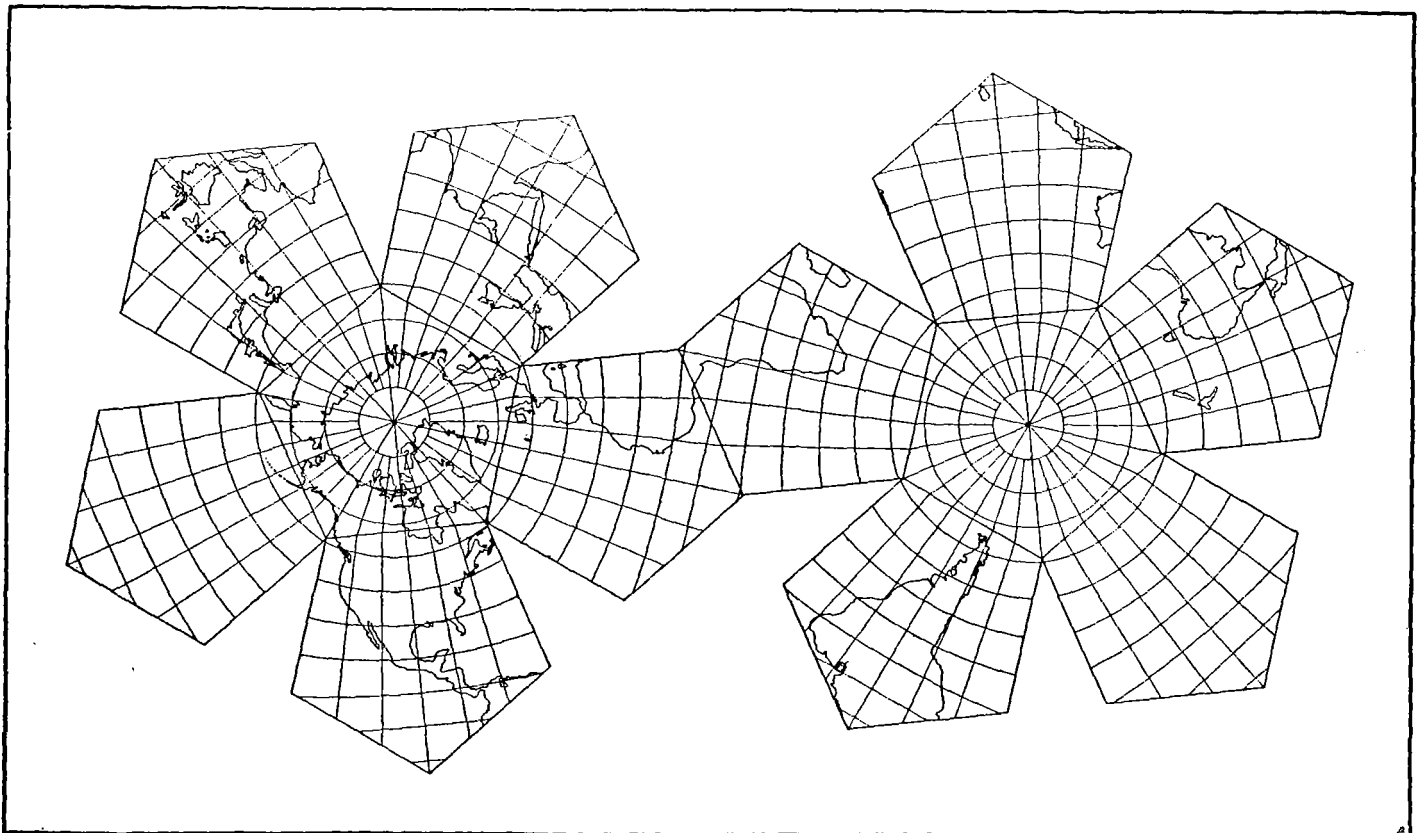


FIGURE 2.—Crude development of dodecahedral projection for world maps

tunate and causes a type of distortion that misrepresents pressure distribution. These considerations lead me to express the hope that cartographers will develop the con-formal projection of the dodecahedron, which permits of presentation on flat surfaces with decidedly less distortion than in either of the two projections described, although, here again, disadvantages may be pointed out. Possibly it is a question whether any one map projection can be used to meet the needs of meteorologists for analysis of atmospheric conditions over the entire globe. I believe, however, that the dodecahedral projection, combined with

one of several possible developments of the dodecahedron, with geographic areas sketched in rudely. The great merit of a projection of this character is that it provides adequate conformal projection of all terrestrial surfaces, especially within the polar regions.

The distortion in form of equal-area maps makes them more or less impossible for meteorological problems involving questions of the dynamics of the atmospheric circulation, whereas on the dodecahedral configuration, the isobaric distributions are almost exact for all parts of the map.



FIGURE 1.—Photographic reproduction of dodecahedral projection world map